DOCUMENT RESUME

ED 405 615 CS 509 452

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TITLE Methodological Innovation in Communication Research.
PUB DATE Nov 96
NOTE 8p.; Paper presented at the Annual Meeting of the Speech Communication Association (82nd, San Diego, CA, November 23-26, 1996).
PUB TYPE Viewpoints (Opinion/Position Papers, Essays, etc.) (120) -- Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Communication (Thought Transfer); *Communication Research; *Innovation; Meta Analysis; *Research Methodology; *Scholarship
IDENTIFIERS *Message Design; Random Effects

ABSTRACT

S. Jackson and S. Jacobs' article entitled "Generalizing about Messages" represents an important methodological innovation in communication research. The article urges procedural change by recommending the use of multiple-message designs because of a weakness in single-message designs; it recommends analyzing message-replication data with a random-effects analysis because such a procedure provides the appropriate basis for the generalizations that are wanted. That is, "Generalizing about Messages" proposes both a certain sort of data-gathering procedural change (i.e., message replications) and a data-analytic procedural change (i.e., random-effects analysis). Indeed, "Generalizing about Messages" has significantly changed customary research procedures in communication. It is much more common now to see multiple message designs. "Generalizing about Messages" is unique in its exploration of the interconnection of procedure and substance--it does not separate issues of methodology from issues of substance. Its implications are far-reaching. For instance, the same arguments underwriting the use of random-effects analyses in primary research designs with multiple messages also underwrite the use of random-effects analyses in meta-analysis. Broadly put, the relevant general principle is that replications should be treated as random whenever the underlying interest is in generalization. The article also invites consideration of the variability of effect on a phenomenon. (Contains eight references.) (TB)

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Methodological Innovation in Communication Research

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CS509452

Paper presented at the Speech Communication Association annual convention, San Diego, CA, November 1996

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Methodological Innovation in Communication Research

"Generalizing About Messages" (Jackson & Jacobs, 1983) represents an important methodological innovation in communication research, and I want to take this opportunity to reflect on the nature of such innovation.

Methodological innovation makes for a change in our research procedures. Broadly put, this commonly takes the form of the use of a new tool, as when some new data-gathering device takes shape (as in think-aloud protocols) or when some new data-analytic procedure appears on the scene (e.g., canonical correlation). Procedural change is (naturally enough) the heart of methodological innovation.

And so it is with "Generalizing About Messages." This is a methodologically focussed paper that urges procedural change: it recommends the use of multiple-message designs, because of the weaknesses of single-message designs; and it recommends analyzing message-replication data with a random-effects analysis, because such a procedure provides the appropriate basis for the generalizations that are wanted. That is, "Generalizing About Messages" proposes both a certain sort of data-gathering procedural change (viz., message replications) and a data-analytic procedural change (viz., random-effects analysis).

And, in fact, "Generalizing About Messages" has significantly changed customary research procedures in communication (see Brashers, 1996). It's much more common now to see multiple-message designs; when single-message are used, often they're accompanied by an acknowledgement of the limitations of the design; and so forth.

This, by itself, makes "Generalizing About Messages" a worthy recipient of the Woolbert award. After all, a research community not only accumulates findings and theories, but also builds up a storehouse of knowledge about research methods. "Generalizing About Messages" has made an important contribution to that fund of methodological knowledge, by leading to significant procedural change.

But this way of thinking about methodological innovation--thinking about it as procedural change--is in some ways misleading, because it separates procedure from substance. To be sure, methodological training commonly

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enforces such a separation. For one thing, graduate-program requirements commonly contain a separate "methods" requirement, as something different from substantive coursework. And communication students are often sent off to other departments to get their "methods" training. In the case of statistical training, the nature of statistical procedures suggests such a distinction, since the procedures are (largely) indifferent to substance: an average is an average, no matter the substantive nature of the variable under examination. That's why so much of statistics can be learned, at least initially, outside of the student's substantive context of interest. (Statistics is not unique in this regard: the same thing is true in the use of foreign languages as "tools.") So the separation of method from substance is in some ways entirely understandable.

But what I want to underscore here is the interconnection of procedure and substance, as represented precisely by "Generalizing About Messages." And as an initial observation, notice that "Generalizing About Messages" is very much a message-centered paper, one focused on message-centered methodological innovation. What I mean is that this is not a discussion of some general abstract methodological innovation (of the sort represented by the development of some broad new statistical procedures, along the lines of LISREL or suchlike). This paper is instead focussed specifically on the problem of generalizing about messages.

And it approaches the problem of generalizing about messages as a distinctive one. For example, the arguments it invokes to underwrite the importance of replications explicitly consider the nature of the objects under investigation: "We have no theories of language and communication rich enough to seriously attempt exhaustive analysis of any particular case of communication (even granting the possibility of an exhaustive description), so we have no means by which to bring under control all the unwanted effects of language" (Jackson & Jacobs, 1983, p. 171). Or: "Elements in a linguistic unit may function differently in combination with each other in one context than they do in other contexts" (p. 171). That is to say, the recommended procedural changes are prompted by consideration of the nature of communication phenomena. The heart of the paper is thus specifically the problem of adapting procedures to fit interests in message generalization.

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Now given the article's focus on generalization across multiple messages, one thing that's striking (in re-reading the article) is that it makes no mention of meta-analysis. Of course, in 1983, meta-analysis was pretty much a figure on the horizon in communication research (and elsewhere, for that matter). Hunter, Schmidt, and Jackson's (1982) book had only just appeared; and (what I think may be) the first meta-analysis in communication was presented at ICA in 1983: Dillard, Hunter, and Burgoon's (1983) review of the foot-in-the-door and door-in-the-face literatures. Perhaps, then, it's unsurprising that "Generalizing About Messages" makes no mention of meta-analysis.

But there is obviously a parallel concern with the use of replications as a better basis for generalizing. Notably, one of the ways in which this work has been extended is precisely the consideration of the relationship between the analysis of primary-research multiple-message designs (as discussed in "Generalizing About Messages") and the meta-analytic treatment of data gathered from replicated single-message designs. It's become clear that there is in fact an underlying similarity between (for example) ANOVA treatment of a replicated primary research design and the parallel meta-analytic treatment of such data (see Jackson, 1992, pp. 118-123).

What perhaps has not yet been so widely appreciated, however, is that the same arguments underwriting the use of random-effects analyses in primary research designs with multiple messages also underwrite the use of random-effects analyses in meta-analysis. Broadly put, the relevant general principle is that replications should be treated as random whenever the underlying interest is in generalization. This principle reflects the fact that fixed-effects and random-effects analyses test different hypotheses. For instance, when comparing two group means while treating message replications as fixed, the hypothesis that is tested concerns whether the responses to a fixed, concrete group of messages differ from the responses to some other fixed, concrete group of messages; the parallel random-effects analysis tests whether responses to one category of messages differs from responses to another category of messages (see, e.g., Jackson, 1992, p. 110).

This is of some importance, because the default option in most meta-analytic work in communication (and elsewhere) has been fixed-effects analyses,

even though investigators are typically interested in generalizing beyond the cases at hand. Perhaps it is unsurprising that a National Research Council panel should have concluded that meta-analytic work "would be improved by the increased use of random effects models in preference to the current default of fixed effects models" (National Research Council, 1992, p. 185).

Concretely speaking, the use of random-effects procedures in meta-analytic work will mean that in estimating the mean and its associated confidence interval, one will take into account not only the usual (human) sampling variation, but also the variability from one implementation to another (between-studies variance). This has the effect of widening the confidence interval over what it would have been in a fixed-effects analysis (see Shadish & Haddock, 1994, p. 275; for related discussion, see Raudenbush, 1994, p. 306).

Against this backdrop, I want to draw attention to the way in which "Generalizing About Messages" invites consideration of the variability of effect as a phenomenon. With the increasing familiarity of meta-analytic work, we are now accustomed to thinking about effect size, and thus to conceptualizing a variable's effects as having some mean effect size. So, for example, in persuasion effects research--my own line of country, and a research domain affording easy examples--one can look across message replications and ask "what's the mean impact on persuasive outcomes across these instantiations?"

But "Generalizing About Messages" implicitly invites us to look not only at the mean of the effect sizes, but also at their variability. (This is invited by an emphasis on random-effects analyses of replicated factors, in which the variability among the implementations figures significantly.) Indeed, the variation among observed effect sizes may be at least as interesting as the average effect across them.

I want to make explicit here the contrast with some alternative views, especially as represented in some images of meta-analytic procedure. Sometimes it is supposed that the point of meta-analytic research is the establishment of sets of homogeneous effect sizes [homogeneous in the sense that a test for heterogeneity in the set of effect sizes fails to achieve significance (that is, the null hypothesis--that the variance of the effect sizes in the population is zero--is not rejected)]. From such a perspective, heterogeneity

in a collection of effect sizes is something to be squeezed out by ever-finer effect-size categorization.

But one might alternatively take heterogeneity to be a fact about the phenomenon. For example, two compliance techniques might have the same mean effect size, but differ considerably in the degree of variability to be expected across implementations. That difference (in variability) might be interesting in and of itself. And certainly that difference could have straightforward practical implications: a persuader contemplating using one of these techniques would have a much better basis for predicting the likely effect in one case than in the other. In any event, the general point is that effect size variability--like the mean effect--can be thought of as simply one aspect of the phenomenon.

The issues raised in "Generalizing About Messages" lead naturally to such thoughts. An emphasis on messages replications, coupled with the use of random-effects analyses, naturally draws attention to variability as a natural property of communication phenomena.

So what I want to underscore today is the way in which "Generalizing About Messages" displays the interplay of substantive and methodological issues in research. It displays this not only by virtue of its procedural recommendations having been stimulated by a consideration of the substantive character of the phenomena under study, but also by virtue of the capacity that its procedural recommendations have to shape our conception of the phenomena of interest.

I don't mean to say that all methodological innovations have the sort of substantive connections that "Generalizing About Messages" did. On the contrary, it's a hallmark of the most significant methodological contributions that they turn out to have the capacity to alter not only our customary research procedures, but also our very conception of the phenomena under study--all the more reason, then, that "Generalizing About Messages" is a deserving recipient of the Charles Woolbert award.

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